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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/623,590

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Satoru Kawahara

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EXAMINER

SCHECHTER, ANDREW M

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/623,590	Applicant(s) KAWAHARA ET AL.	
	Examiner Andrew Schechter	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-17 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/23/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: it does not identify the citizenship of each inventor.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 16 is rejected under 35 U.S.C. 102(e) as being anticipated by *Uchiyama et al.*, U.S. Patent No. 6,565,974.

Uchiyama discloses [see col. 17, lines 42-58, for instance] a quarter wavelength plate, which can be used in a brightness enhancement film, wherein an in-plane retardation with respect to incident light from a normal direction of the quarter wavelength plate satisfies $\Delta n d(450) / \Delta n d(550) \leq 1.02$, with the terms defined as recited. Claim 16 is therefore anticipated.

5. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by *Fujii et al.*, EP 1 160 591 A1.

Fujii discloses [see Example 3B, and Table 1 on p. 28, for instance] a quarter wavelength plate, which can be used in a brightness enhancement film, wherein the quarter wavelength plate is a film comprising a polymer having a photoelastic coefficient of $40 \times 10^{-12} \text{ m}^2/\text{N}$ or smaller [it is $6 \times 10^{-12} \text{ m}^2/\text{N}$ in the example]. Claim 17 is therefore anticipated.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 and 6-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kameyama et al.*, U.S. Patent No. 6,342,934 in view of *Arakawa*, U.S. Patent No. 6,812,983.

Considering claims 1 and 2, *Kameyama* discloses an optical film comprising a polarizing plate [3] and a brightness enhancing film [1 and 21]. The brightness enhancement film comprises a layer having a circularly polarized light separating function [1] and a quarter wavelength plate [21]. *Kameyama* does not disclose that a maximum chromaticity difference of in-plane transmitted light of the optical film is about 0.008 or smaller when the film is tested by being attached to a glass plate and allowed to stand at 70°C for 120 hours.

Arakawa also does not disclose testing an optical film at 70°C for 120 hours and then checking the uniformity of its chromaticity. However, *Arakawa* discloses a retardation plate appropriate for using in forming the quarter wave plate of *Kameyama's* brightness enhancing film. It would have been obvious to one of ordinary skill in the art at the time of the invention to use *Arakawa's* retardation plate in the device of *Kameyama*, motivated by the teaching of *Arakawa* that it can be fabricated by a simple process and uniformly retards light across the entire visible spectrum [abstract]. *Arakawa* teaches [see Figs. 2 and 3, and col. 10, line 21, for instance] that the retardation at 450 nm should be less than the retardation at 550 nm, satisfying the limitation in claim 3 that $\Delta n_d(450) / \Delta n_d(550) \leq 1.02$. *Arakawa* also teaches [col. 13, line 56 – col. 14, line 5] that the photoelasticity should be less than 20 Brewsters [1 Brewster = $10^{-12} \text{ m}^2/\text{N}$], satisfying the limitation in claim 6 that the photoelastic coefficient be $40 \times$

Art Unit: 2871

10^{-12} m²/N or smaller. These are the same properties to which the applicant's specification attributed the maximum chromaticity difference being 0.008 or smaller after standing at 70°C for 120 hours. Also, *Arakawa* teaches [see abstract] that norbornene should be used to make the retardation plate, just as the applicant's Example A-3, so the structure of *Kameyama* in view of *Arakawa* is substantially identical to that in the claim. The examiner considers these facts as providing a rationale and evidence that the structure of *Kameyama* in view of *Arakawa* would inherently satisfy the limitation of claim 1, if the test at 70°C for 120 hours were performed [see MPEP 2112]. (In such circumstances, the burden shifts to the applicant to show an unobvious difference between the claimed invention and that of the prior art.) Claims 1-3 and 6 are therefore unpatentable.

Arakawa discloses that the quarter wavelength plate can be a liquid crystal layer comprising a nematic liquid crystal [col. 4, lines 54-67], so claim 7 is also unpatentable. The constituent molecules of the layer having the circularly polarized light separating function are oriented to have a cholesteric structure, and it is a cholesteric liquid crystal layer, so claims 8 and 9 are also unpatentable. *Kameyama* discloses having the polarizing plate and the brightness enhancement film laminated via an adhesive [col. 14, lines 50-65], so claim 10 is also unpatentable. The examiner takes official notice that diagonal lengths of 250 mm or larger (for LCD computer monitors and TVs, for instance) are well-known, and it would have been obvious to one of ordinary skill in the art at the time of the invention to have this size, motivated by the desire to make the display easily viewable, so claim 11 is also unpatentable. Claims 12 and 13 recite

maximum chromaticity differences of 0.005 and 0.003, which are unpatentable following the same reasoning given above that 0.008 is unpatentable, so claims 12 and 13 are unpatentable. *Kameyama* discloses an LCD and an image display apparatus, so claims 14 and 15 are also unpatentable.

Considering claim 4, *Arakawa* explicitly discloses the property $\Delta n_d(450) / \Delta n_d(550) \leq 1.02$ for light normal to the quarter wavelength plate, but is silent on whether light at 45° to the quarter wavelength satisfies $\Delta n'_d(450) / \Delta n'_d(550) \leq 1.04$. As above, since the structure is substantially identical to the applicant's structure, the examiner considers this to provide a rationale and evidence that the structure of *Kameyama* in view of *Arakawa* would inherently satisfy the property recited in claim 4 [see MPEP 2112]. (In such circumstances, the burden shifts to the applicant to show an unobvious difference between the claimed invention and that of the prior art.) Claim 4 is therefore unpatentable.

Allowable Subject Matter

8. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose the device of claim 5, in particular the additional limitation that the quarter wavelength plate comprises a retardation film satisfying $n_x \times$ >

Art Unit: 2871

$ny^r = nz^r$ and a liquid crystal layer satisfying $nz^c > nx^c \geq ny^c$, as defined in the claim.


Claim 5 would therefore be allowable if rewritten appropriately.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Andrew Schechter
Patent Examiner
Technology Center 2800
10 December 2004